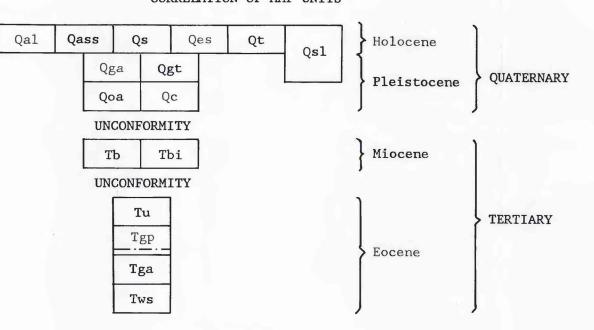


## CORRELATION OF MAP UNITS



## DESCRIPTION OF MAP UNITS

[Detailed descriptions of the surficial deposits of the South Mamm Peak quadrangle are included in a report on the Quaternary geology of the Grand and Battlement Mesas, Colorado, by Yeend (1969)] (1 ft = 0.3048 m; 1 m = 3.280 ft)

- Alluvial valley fill, fan, and terrace deposits (Holocene) -- Mud, silt, sand, and gravel forming valley floor of Plateau, Buzzard, and East Mamm Creeks consists mostly of locally derived, poorly sorted rock detritus. Lenses of reddish-brown sandy silt are common
- Alluvial and eolian sand and silt deposits (Holocene) -- Yellowish-brown, fine sand and silt and minor gray clay; silt and sand are generally well sorted. Composed mostly of quartz derived from nearby sedimentary rocks. Mostly forms valley fill in tributaries of Plateau and Buzzard Creeks
- Slump, earthflow, and landslide deposits (Holocene) -- Small, isolated slumps in southern part of quadrangle developed in claystone beds of Wasatch Formation. May be presently active
- Earthflow and soil-creep deposits (Holocene)--Poorly sorted boulder, cobble, and pebble gravel in a matrix of greenishgray sandy silt. Contains some basalt boulders derived from older till, landslide and colluvial deposits, and angular fragments of sandstone, siltstone, and claystone derived from the Wasatch and Green River Formations. Mostly restricted to areas underlain by claystone units in the Wasatch Formation
- Talus deposits (Holocene) -- Angular, lichen covered boulders and cobbles of basalt, commonly 1-4 ft in diameter, some as large as 20 ft in diameter, occur at base of basalt cliff that forms top of South Mamm Peak in northwestern part of quadrangle
- Slump blocks and solifluction deposits (Holocene and Pleistocene) -- Basalt blocks and boulders and unconsolidated material moved downslope by gravity. Slump blocks form ridges of basalt rubble mantling much of Battlement Mesa. Unbroken blocks are as much as 1,000-2,000 ft long. Most deposits are of Pleistocene age but some movement continues to present time
- Grand Mesa Formation (Pleistocene--probably age of Pinedale(?) glaciation) Alluvial gravel deposits -- Silt, sand, and gravel. Pebble, cobble, and boulder gravel includes locally derived sedimentary rocks and basalt. Reddishbrown, wind-blown sand and silt locally mantles surfaces
- Till--Abundant angular to subangular pebbles, cobbles, and boulders in a matrix of grayish-brown sand, silt, and clay. Ninety percent of the pebbles, cobbles, and boulders are basalt. A few basalt boulders and cobbles are striated, but many are soled and faceted. Large basalt fragments in the till show little weathering. Mostly forms till plain along Buzzard and Plateau Creeks
  - Older deposits (Pleistocene--Pre-Bull Lake(?)
  - Alluvial fan-gravel deposits -- Pebble, cobble, and boulder gravel; nearly equal amounts of basalt and sedimentary rock fragments derived from local sandstone, claystone, and marlstone. Matrix is greenish-gray, silty sand. Maximum thickness about 220 ft
  - Colluvium -- Angular to subangular, poorly sorted boulders, cobbles, and pebbles in a matrix of greenish-gray, sandy silt. May include till. Basalt boulders as much as 5 ft in maximum dimension; sandstone, marlstone, and claystone slabs as much as 1 ft in length are common
- Basalt (Miocene) -- Erosional remnant of basalt flow that caps Grand and Battlement Mesas. Occurs on summit of South Mamm Peak
- Intrusive rocks (Miocene) -- Dikes composed of basalt. Presumably fills vents that fed overlying igneous flows
- Uinta Formation (Eocene) -- Light-brown and gray, very fine grained to medium-grained sandstone and light-gray marlstone and siltstone; red claystone in upper part of unit on Bald Mountain; contains fossilized pelecypods, gastropods, ostracodes, and fragments of fossil vertebrates. Maximum thickness of exposed rocks about 1,000 ft
- Green River Formation (Eocene) Parachute Creek Member -- Gray-weathering, black, brown, and gray marlstone, including oil shale that locally forms cliffs; contains minor amounts of lightgray siltstone, light-gray and brown fine- to medium-grained sandstone, and numerous very thin persistent beds of light-gray to brown analcimized tuff. Thickness 400-500 ft
  - Mahogany oil-shale bed--Outcrop of richest oil-shale bed is base of Parachute Creek Member except near west edge of quadrangle where it is as much as 80 ft above the base. Thickness 2-4 ft

- Anvil Points Member -- Gray and brown, fineto coarse-grained sandstone, minor amounts of light-gray siltstone and marlstone, and a few thin tan beds of low-grade oil shale. Maximum thickness about 1,200 ft
- Shire Member of Wasatch Formation (Eocene) --Variegated purple, lavender, red, and gray shale and claystone; some lenticular beds of fine- to coarse-grained sandstone; and some thin limestone beds. Exposed thickness about 1,000 ft; however, based on drill-hole and outcrop information, the Shire Member may exceed 3,500 ft in thickness (Johnson and others, 1979). Mostly covered by Quaternary units
- Contact -- Approximately located where obscured
- by soil cover or vegetation
- Dry hole--Oil and gas test well. Number keyed to table 1

Gas well-Number keyed to table 1

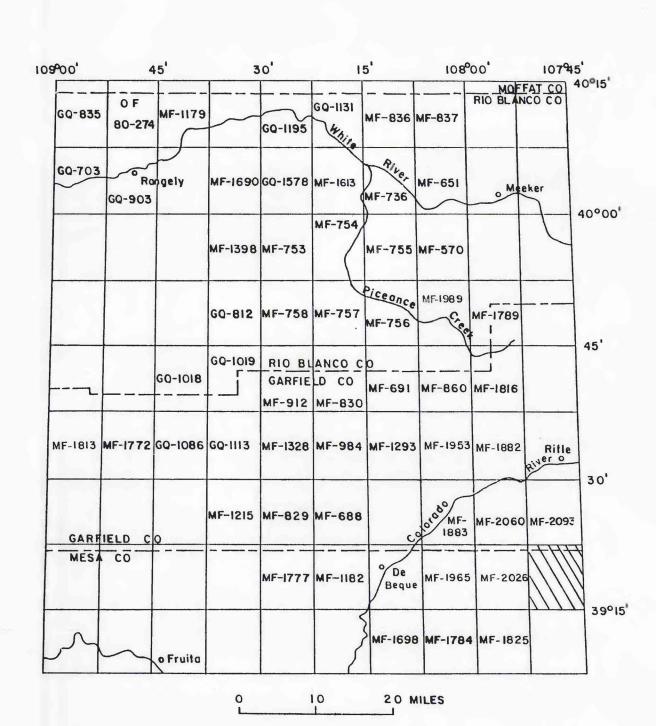
Structure contour -- Drawn on top of Wasatch Formation; dashed where removed by erosion. Contour interval 100 ft

## REFERENCES

- Johnson, R.C., Granica, M.P., and Dessenberger, N.C., 1979, Cross section C-C' of Upper Cretaceous and Lower Tertiary rocks, southern Piceance Creek basin, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map
- Yeend, W.E., 1969, Quaternary geology of the Grand and Battlement Mesas area, Colorado: U.S. Geological Survey Professional Paper 617, 50 p.

## Table 1. -- Drill-hole data, South Mamm Peak quadrangle, Colorado [All drill holes are oil and gas exploration wells]

Drill- hole no.	Sec-		Total depth
(on map)	tion	Company and name	Feet
		T. 8 S., R. 94 W.	
1	25	Mobil Oil Co., 1-25 Brush Creek	7,329
		T. 9 S., R. 93 W.	
2	15	Union Oil Co., 1 Van Den Heuvel	7,210
3	20	Union Oil Co., 1 Gunderson	8,195
		T. 9 S., R. 94 W.	
4	11	Terra Resources, Inc., 1-11 Brush Creek McDaniel	8,570
		1-11 blush cleek McDaniel	0,570
5	26	Kenai Oil and Gas Inc., 26-32 Starner	7,816
		20 32 Scarner	7,010



INDEX MAP SHOWING LOCATION OF THIS QUADRANGLE (PATTERNED) AND OTHER PUBLISHED U.S. GEOLOGICAL SURVEY 71/2-MINUTE GEOLOGIC MAPS IN THE PICEANCE CREEK BASIN AREA, NORTHWESTERN COLORADO. PUBLISHED USGS MAPS INCLUDE GEOLOGIC QUADRANGLE MAPS (GQ), MISCELLANEOUS FIELD STUDIES MAPS (MF), AND OPEN-FILE REPORTS (OF).